National Institute of Environmental Health Sciences

Syndromic surveillance and heat wave morbidity: A pilot study based on emergency departments in France

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Abstract:

BACKGROUND: The health impacts of heat waves are serious and have prompted the development of heat wave response plans. Even when they are efficient, these plans are developed to limit the health effects of heat waves. This study was designed to determine relevant indicators related to health effects of heat waves and to evaluate the ability of a syndromic surveillance system to monitor variations in the activity of emergency departments over time. The study uses data collected during the summer 2006 when a new heat wave occurred in France. METHODS: Data recorded from 49 emergency departments since July 2004, were transmitted daily via the Internet to the French Institute for Public Health Surveillance. Items collected on patients included diagnosis (ICD10 codes), outcome, and age. Statistical t-tests were used to compare, for several health conditions, the daily averages of patients within different age groups and periods (whether 'on alert' or 'off alert'). RESULTS: A limited number of adverse health conditions occurred more frequently during hot period: dehydration, hyperthermia, malaise, hyponatremia, renal colic, and renal failure. Over all health conditions, the total number of patients per day remained equal between the 'on alert' and 'off alert' periods (4,557.7/day vs. 4,511.2/day), but the number of elderly patients increased significantly during the 'on alert' period relative to the 'off alert' period (476.7/day vs. 446.2/day $p < 0.05$). CONCLUSION: Our results show the interest to monitor specific indicators during hot periods and to focus surveillance efforts on the elderly. Syndromic surveillance allowed the collection of data in real time and the subsequent optimization of the response by public health agencies. This method of surveillance should therefore be considered as an essential part of efforts to prevent the health effects of heat waves.

Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2654446

Resource Description

Early Warning System: ☒

resource focus on systems used to warn populations of high temperatures, extreme weather, or other elements of climate change to prevent harm to health

A focus of content

Exposure : ☒

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Extreme Heat

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location:

resource focuses on specific location

Non-United States

Non-United States: Europe

European Region/Country: European Country

Other European Country : France

Health Impact:

specification of health effect or disease related to climate change exposure

Cardiovascular Effect, Injury, Morbidity/Mortality, Neurological Effect, Respiratory Effect, Urologic Effect, Other Health Impact

Respiratory Effect: Asthma

Other Health Impact: heat related illness

Intervention:

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Medical Community Engagement:

resource focus on how the medical community discusses or acts to address health impacts of climate change

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Population of Concern: A focus of content

Population of Concern:

populations at particular risk or vulnerability to climate change impacts

Elderly

Resource Type:

format or standard characteristic of resource

Research Article

Resilience: ☑

capacity of an individual, community, or institution to dynamically and effectively respond or adapt to shifting climate impact circumstances while continuing to function

A focus of content

Timescale: ☑

time period studied

Time Scale Unspecified

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content